Joint Deployment Distribution Enterprise (JDDE)
Call for Government-proposed
Research, Development, Test and Evaluation (RDT&E) Projects, FY18-22

United States Transportation Command (USTRANSCOM) is soliciting government organizations for RDT&E projects to address applicable Distribution Process Owner (DPO)/Joint Deployment and Distribution Enterprise (JDDE) Capability technology gaps. This solicitation is for projects starting in FY18.

This is a two-phase selection process (Phase I is a 4-page white paper and Phase II is a full, 20-page proposal) call.

Those submitting proposals are encouraged to speak with USTRANSCOM subject matter experts to discuss their proposal, details of the USTRANSCOM need, and other factors to improve the quality of the proposal and to better determine commitment to sponsorship and transition.

2016 Deadlines are as follows:

31 Mar 1600 (CST)	-- Submittal of electronic Phase I white papers. Late submissions will not be considered.
1 - 28 Apr	-- Phase I evaluation period.
2 May	-- Phase II notifications.
May/Jun	-- Phase II Offeror's can discuss proposals with SMEs/evaluators to gain clarification and to better focus proposals on targeted gaps. TCJ5-GC RDT&E Team to facilitate discussions.
30 Jun 1600 (CST)	-- Submittal of electronic Phase II proposals. Late submissions **will not** be considered.
31 Oct 16	-- Notification of final selection (due to multi-month collaborative evaluation/vetting process)

Appendix 1 contains the highest-priority needs identified by USTRANSCOM, its Service components, and the JDDE community. Additional technology gaps can be found at http://www.transcom.mil/cmd/associated/rdte/, proposals addressing those technology challenges are a lower priority but will be considered if represent a next-generation leap in technology. Proposals addressing Appendix 1 needs will compete best.

Projects should be described in terms of the appropriate Technology Readiness Level (TRL). USTRANSCOM can only fund developmental efforts whose TRL level is 4 through 6 (Budget Activity 3, Advanced Technology Development). Proposals to merely extend an existing capability, or modernize it (such as preplanned product improvement (P3I)) fall in the acquisition/procurement area, are beyond TRL 7, and are not candidates for USTRANSCOM

RDT&E funding. TRL definitions/descriptions found in USTRANSCOMI 61-1 at https://ww2.ustranscom.mil/publications/pubs_index.cfm.

Proposals most likely to be chosen by the government will demonstrate a significant number of project selection criteria listed at Appendix 2. Prior experience demonstrates that relatively short-duration projects (up to 3 years), concentrating on prototyping *and transitioning/integrating* a new "component" capability within existing JDDE systems, architectures and programs/systems of record, are likely to be most competitive. Proposers *may* submit proposals for multi-year programs of research and development, but should be aware longer-duration efforts face significant challenges finding a transition sponsor and funding.

If multi-year/multi-project efforts are proposed, proposers should identify a baseline project, (including, if appropriate, a start-up engineering feasibility study) with optional follow-on efforts to be selected by USTRANSCOM, based on assessment of the success of earlier segments, continued interest in proposed capability, and the availability of funding for development and a sponsor for transition.

Proposing organizations should plan to execute approved projects though their own contracting and technical/management oversight capabilities and facilities. USTRANSCOM will provide RDT&E funding via appropriate government funding vehicle. USTRANSCOM requires monthly report of funds (obligations/outlays) and semi-annual programmatic briefings.

The proposer, with assistance of the Government sponsor, is responsible for designing and executing a transition strategy, which should include detailed planning with programs/systems of record to move the new technology out of the development environment into system program office work and/or into operational use.

If the submitting government agency is sponsoring a project to be developed with an industry or academic partner, those outside agencies should be apprised that USTRANSCOM contractor personnel (including but not limited to The MITRE Corporation, LMI Government Consulting, CGI Federal, and others) may act as advisors to the selection process. Contractors advising USTRANSCOM in this evaluation have already signed, or will be required to sign, non-disclosure agreements prior to accessing proprietary materials.

If the proposer wishes to submit a classified proposal, first contact below Points of Contact at phone/e-mail/address listed below.

Send correspondence to transcom.scott.tcj5j4.list.rdte@mail.mil

Points of contact:
Mr. Lou Bernstein, USTRANSCOM TCJ5-GC, DSN 770-4337 (commercial (618) 220-4337), lou.bernstein.civ@mail.mil

Mr. Pat Riley, LMI Government Consulting, USTRANSCOM TCJ5-GC, DSN 770-4360, (commercial (618) 220-4360), patrick.t.riley.ctr@mail.mil

Mr. John Gosebrink, CGI Federal, USTRANSCOM TCJ5-GC, DSN 770-4688, (commercial (618) 220-4688), frederick.j.gosebrink.ctr@mail.mil

Mr. Aaron Harris, MITRE, USTRANSCOM TCJ5-GC, DSN 770-4706, (commercial (618) 220-4706), aaron.b.harris12.ctr@mail.mil

USTRANSCOM TCJ5-GC
508 Scott Drive
Scott AFB, IL 62225-5357

3 Appendices (Attached)
1. Technology Needs/Focus Areas for FY18
2. USTRANSCOM RDT&E Project Selection Criteria
3. USTRANSCOM RDT&E 2-Phase Project Selection Process (contains format templates)

APPENDIX 1

Technology Needs/Focus Areas for FY18

USTRANSCOM RDT&E focuses on emerging technologies with joint deployment/distribution improvement potential. The challenges in this announcement are intended to provide general joint deployment/distribution areas of interest and should not be construed to represent areas which USTRANSCOM can or will apply funds to proposed solution.

FOUR TECHNOLOGY CATEGORIES (all projects fall under one of these categories):

Command and Control/Optimization/Modeling and Simulation - Emerging technologies that support the sharing of information and services across security boundaries that maintains information assurance and system integrity; technologies that ease the development cycle on source systems for web services and make best use of geographically distributed server environments. Integration of these complex technologies and methodologies requires improved processes for managing virtualized environments and service based architectures. These technologies include but are not limited to the following areas of interest; cross domain communications, web services provisioning, and portfolio management capabilities and transfer of data from a government web site in the public domain to a sensitive/unclassified government data system for transportation planning/shipping of vendor shipments.

End-to-End Visibility - Enhanced end-to-end visibility of all aspects of the projection and sustainment is required to improve the effectiveness/efficiency of deployment/distribution/redeployment operations to ensure warfighter support and confidence. This requires investigation into next generation Automated Information Technology (AIT)/Total Asset Visibility (TAV) technologies and/or container security to improve end-to-end distribution visibility and enhance planning/ execution and transform sustainment operations.

Cyber - Mission assurance in a persuasive/dynamic cyber environment.

Global Access Technologies - Seeking Air/Land/Sea technologies that provide timely capability to deliver cargo to dangerous (i.e. anti-access/austere) locations across a complex, distributed battlefield without jeopardizing warfighter safety.

HIGHEST PRIORITY NEEDS/FOCUS AREAS (not rank ordered):

Modeling - Budget uncertainty and the evolving global mobility environment drive the need to modify our business processes, equipment and infrastructure. Currently USTRANSCOM is limited in its ability to weigh alternative courses of action and/or measure the effectiveness of the proposed changes. USTRANSCOM requires modeling & decision support tools to transform systems, programs and initiatives to ensure operational efficiency.

Manipulation of Large Data Sets – This area involves the ability for USTRANSCOM to manage "Big Data." The Command requires the capability to explore, analyze and identify trends and correlations between elements of large data sets. This includes the ability to couple

separate databases to create a set of data elements. Such manipulation includes a set of tools to assist analysts with identifying, visualizing and portraying data.

Information Visualization -The Warfighter requires a graphical view of logistics and transportation land, sea, air, and waterway operational information with drill-down capability into specific details. Users require a visual representation of information concerning inventory, movement, logistics and transportation information as well as easier and quicker understanding of rapidly changing information based on conveyance maintenance status, weather, intelligence, political/military considerations, etc.

Information Science and Technology - This area involves the maturing of technologies that support state-of-the-art capabilities for the Warfighter in the analysis, assimilation, and dissemination of real and simulated digitized battlespace information. Interests include, but are not limited to: intelligent software agents, course of action analysis, transportation planning and feasibility, embedded training, optimization and resource allocation solutions, collaborative technologies for distributed work environments and data visualization.

Knowledge Management Layer - The operational and technical requirements of an effective near real-time global transportation network cannot be achieved through the application of legacy data-centric software design and development principles. Such a network calls for a degree of interoperability and a level of collaborative decision-support that are not available in any existing industry or government software environment of comparable scale. USTRANSCOM is looking to create an information-centric knowledge management layer on top of a data-centric Corporate Data Environment meta database layer.

Risk Assessment – There is a lack of real-time risk assessment information available for commanders, as well as deploying units, to rapidly determine acceptable levels of risk while en route to final destinations or at a intermediate staging locations.

End-to-End (E2E) Asset Visibility - Stakeholders throughout the deployment and distribution process require the ability to determine shipment status through system access at the beginning of a movement through the various nodes to the final destination/point of need. Stakeholders need the capability to view the status and availability of all assets in-progress, in-storage, in-transit, or in-theater; detect pipeline bottlenecks and threats; and provide recommended alternatives to overcome bottlenecks and identify threats where shipment security was compromised. Challenges remain in the effectiveness and efficiency of data capture, the ability to maintain visibility of these assets as they traverse the chain and in the ability to create an enterprise view of the data.

Automatic Identification Technology (AIT) - AIT and automated information systems (AIS) are two of the basic building blocks in DoD's effort to provide timely asset visibility in the logistics pipeline, whether in-storage, in-transit, in-process or in-theater. Specifically, AIT is used by a business AIS to capture the identity of materiel or packaging at each layer of consolidation to improve logistics processes. AIT also contributes to the track-and-trace capability within the Department's supply and distribution operations. USTRANSCOM is

interested in partnering with other DoD organizations in AIT solutions that improve logistics processes in a resource-constraint budget environment.

Data - Explore ideas and prototype tools for advanced data management concepts, including schema integration and data warehousing, in a standardized data environment. Allow transparent access to multiple heterogeneous databases, data mining and knowledge discovery in large distributed databases. Organize unstructured/multi-structured data and documents into easily searchable queries to enhance data analysis.

Electronic Data Interchange – Today USTRANSCOM and its components use electronic data interchange (EDI) to communicate with its industry partners. EDI continues to evolve/mature to meet requirements. The move towards a service-oriented architecture provides additional opportunities for EDI that did not exist previously. There is a need to assess the current state of how EDI is being used and then evaluate where there may be opportunities for future enhancement.

Cyber Security - USTRANSCOM and its components must be able to defend its information, detect and mitigate cyber threats against mobility platforms, networks, and C2 systems to continue uninterrupted operations. This requires a platform independent capability to secure deployment/distribution information resident in or traversing low assurance info networks/environments. This includes predictive analysis techniques /tools to dynamically assess future threats, attack vectors, and attacker intent and anticipate actions before they happen (i.e., the capability to defeat an attack before it happens, instead of having to react to it as it occurs). Capability must allow for assured, secure and trusted communications protected with Federal Information Processing Standard (FIPS) 140-2 compliant cryptography. Solutions must require minimal management/infrastructure overhead, be able to integrate into existing DoD and commercial information systems, and leverage government-owned/operated capabilities to the maximum extent possible. Capability must enhance government collaboration in its ability to predict, detect, analyze, assimilate, mitigate, and deter cyber threats.

Rapid Distribution Technologies - Concepts/technologies that improve the end-to-end flow of military unit equipment and cargo through ocean ports, aerial ports and intermodal inter-change points, to include autonomous capabilities and motion compensation interface platforms, for use with commercial cargo vessels to enhance cargo throughput of military unit equipment at sea.

Delivery Technologies - Seeking innovative solutions, to include autonomous technologies, that provide for the safe, accurate and timely delivery of joint forces and their sustainment within an anti-access/Area Denial (A2/AD) environment across a complex, distributed battlefield. This includes the re-supply of forces in austere conditions and in high threat areas are just two of the ballooning missions driving the need for more accurate and single-pass precision airdrop. This area applies to technologies to ensure survivability of aircraft and personnel on the ground while delivering cargo to a precise location within a high threat environment.

Opportune Landing Site Identification - All-weather airfield independence technology focusing on mobility aircraft determining the security of a landing site for arrival and throughput operations without use of a pre-coordinated survey or on-site, ground party analysis.

Rapid Construction for Points of Debarkation - The JDDE lacks the ability to rapidly assess, establish, and secure ports of debarkation in an anti-access/area denial environment to make the Joint force more expeditionary.

Force Protection - Terrorism and asymmetric warfare pose an ever-present threat to our Nation's strategic mobility assets (personnel, equipment and mobility assets) and their embarked cargo, equipment and personnel. This broad area of interest supports proposals to counter these types of threats. Of particular interest is the application of technology to create virtual borders at the point of loading; decontamination of transportation assets; and enhance seaborne and air cargo container standards. Screen cargo for smuggled goods as well as explosive, chemical and biological threats. Technology interests are in those systems with stand-off detection, hand-held detection, vehicle inspection detection, robotic inspection detection, unmanned vehicles detection--both on land and in the water--and fixed detectors which allow for detection before endangering personnel and/or resources. Interests include technologies that, when applied, detect access attempts and can be monitored for intrusion.

NOTE: Additional technology gaps can be found by accessing the USTRANSCOM RDT&E Handbook (USTRANSCOMH 60-2) under "References" tab at http://www.transcom.mil/cmd/associated/rdte/, proposals addressing those technology challenges are a lower priority but will be considered.

APPENDIX 2

USTRANSCOM Research, Development, Test, and Evaluation Program
Project Selection Criteria

Award decisions will be based on a competitive selection of full proposals from subject matter experts and/or scientific/technical reviews.

1. JDDE GAPS, areas of interest, and focus areas that this proposal targets.
   a. Were high priority gaps targeted as listed in Appendix 1?
   b. What are the target JDDE GAPS, areas of interest, or focus areas?
   c. How do specific technological capabilities enhance distribution, transportation, planning/execution, and decision support processes?

2. Applicability to Joint Deployment Distribution Enterprise
   a. Transformational potential (versus "modernization")
   b. Joint capability crucial to DOD supply chain
   c. Not associated with major weapon system or end item acquisition program

3. Potential ROI and Affordability
   a. Shows significant positive ROI in lifecycle of application
   b. Demonstrates a compelling business case for use

4. Technical Merit: Utilizes sound scientific/engineering principles, assessed by pertinent experts.

5. Technical Maturity
   a. Project demonstrates Technology Readiness Level 4-6 at startup
   b. Project demonstrates TRL advancement commensurate with funded level of effort, but not beyond TRL 7 at conclusion

6. Programmatics
   a. Project plan demonstrates well-defined, defendable, and properly interrelated cost, schedule, and performance objectives
   b. Project is structured in achievable phases or spirals with clear deliverables
   c. Project demonstrates well-defined exit criteria, performance goals, and well-defined deliverables (studies, hardware or software prototypes, experimentation results, etc.

7. Technology Transition Potential
   a. Project has committed transition/integration agency, defined by provision of project manager or owning agency and identifies committed funding for next steps or transition to further development work.
   b. Project plan demonstrates adequate understanding of integration requirements if intended to transition to operational use, or presents clear methodology for determining those requirements during the course of research

APPENDIX 3

USTRANSCOM RDT&E Two-Phase Project Selection Process

Formats and Content for Proposals

The likelihood a submission's success will be increased by clearly demonstrating the capability to be researched/developed covers an important need; that the proposer understands the Joint Deployment and Distribution Enterprise domain and its challenges; and the technical, programmatic, integration, and sustainment challenges of the proposed capability can demonstrate a benefit and/or positive return on investment (ROI) for the effort; and has an experienced/skilled team of researchers who will be assigned to do the developmental work.

Note: This is not a source selection.

USTRANSCOM's RDT&E Program is not a source selection process. The RDT&E Program solicits only Government agencies for proposals. Although many proposals are developed with an industry or academic partner, USTRANSCOM does not accept vendor specified proposals, or proposals with vendor specific markings (i.e. Copyright XXX Inc., XXX Inc. Propriety, XXX Inc. Logo). The selection of a non-USTRANSCOM submitted project for funding only involves USTRANSCOM to act as a stakeholder in the execution of the project. It is the role of the submitting agency to adhere to all contracting regulations and serve as the Project Manager.

Phase I requires submittal of a "white paper." White papers are no more than four pages in length with an optional appendix and are intended to preclude unwarranted effort on the part of a proposer whose proposed work is not of interest to USTRANSCOM. The white paper should summarize the full proposal and demonstrate succinctly that the concept is worthy of additional consideration for funding by the government.

Phase II requires submittal of a "proposal." This portion of the process is only for successful proposers selected from Phase I. Selected proposers will be requested to submit a definitive technical and cost proposal for USTRANSCOM to evaluate. Selection is dependent on the submission of a sound technical and cost proposal and is subject to successful negotiations as well as the availability of funds.

Phase I - White Paper (4-page limit)

A2.4. The white paper must be formatted as stated below. Submittal shall be in Times New Roman font of at least 12 points printed in portrait format. Lines may be single-spaced, though double-spaced is preferred. Pages shall include a 1-inch margin at top, bottom, and both sides. A footer within the 1-inch bottom margin containing page number, submittal title, proposer's company name, and appropriate classification or proprietary notice shall be included and must be in least 8-point Times New Roman font.   The cover page and optional two-page appendix are not included in the 4-page limitation.

A2.5. Section A: Cover Page (not included in 4-page limit). Include title of proposed project and acronym/short title, if appropriate; period of performance; estimated total cost and cost per year of performance; technical and contracting point(s) of contact, phone, fax, e-mail, date, company or agency name, and address; and notice of intellectual property content, security level, and other necessary markings; plus illustrations or logos as chosen by the proposer. This cover page itself should not contain proprietary or otherwise sensitive information.

A2.6. Section B: Project Description:

A2.6.1. Write a brief introduction describing what the RDT&E project will deliver. Acronyms spelled out on the cover page do not have to be repeated, but all other acronyms should be spelled out at first use (here and throughout document).

A2.6.2. Describe need being addressed/capability to be researched to demonstrate the proposer knows the domain and its challenges. Cite pertinent formal requirements documentation if it exists.

A2.6.3. Describe the maturity of the technology, including Technology Readiness Level (TRL) at project startup and intended TRL at conclusion of the described RDT&E effort to describe the scope of the research effort and its maturity at the end of the project.

A2.6.4. Describe the anticipated benefit/ROI for implementing the proposed capability. Although a quantitative ROI is not mandatory, an objective ROI is more compelling than a subjective one. A quantified ROI should be calculated without excessive assumptions prior to the RDT&E effort. If selected for a Phase II submission, anticipated benefit/ROI will need to be detailed as described in the Phase II format below. Provide documented analysis for ROI as requested.

A2.6.5. List the science/engineering/supply chain or other principles which demonstrate the proposal has technical merit and is likely to be able to solve the problem being addressed.

A2.6.6. List the performance metrics by which the RDT&E effort will be measured. This demonstrates the proposer comprehends the factors which dictate success for the effort.

A2.6.7. Describe instances where the technical approach has been used in industry or other non-DoD organizations.

A2.6.8. List the systems, corporate services, and/or programs of record with which this capability may be integrated, along with corresponding interfaces. State if there is already commitment by the Program Management Office of the system or program of record to incorporate the capability, once fully developed. This demonstrates a transition destination has been considered.

A2.6.9. List the numbers and experience of the designated researchers or other individuals who will perform this work and the location(s) where work will be done. This demonstrates the likelihood and level of expertise that will be applied. List the projects completed previously by the assigned researchers, providing telephone and organizational points of contact for the customer and/or user of the capability.

A2.6.10. List major deliverables of the project (mid-term or final reports, prototypes, analysis, etc.), a high-level schedule which includes these deliverables, and the funding proposed for each phase of the effort (including by each fiscal year of the project's span). This demonstrates the proposer's technical/programmatic planning capabilities and understanding of the scope of the effort required.

A2.7. Appendix (not included in 4-page limit). The proposer may include a 2-page appendix, not included in the body page count, consisting of a diagram, photograph, or other visual aid to further describe the proposed RDT&E project and its deliverables, understanding of the domain and the place the technology will have in it, or other illustrative facts. This appendix is meant to be a visual aid or place for tables or lists, not additional room for the text of the proposal.

Phase II - Proposal (20-page limit)

A2.8. This document is only required from proposers who are notified of the government's selection of their Phase I proposals.

A2.8.1. The proposal shall be formatted as stated below. Submittal shall be in Times New Roman font of at least 12 points printed in portrait format. Lines may be single-spaced, though double-spaced is preferred. Pages shall include a 1-inch margin at top, bottom, and both sides. A footer within the 1-inch bottom margin containing page number, submittal title, proposer's company name, and appropriate classification or proprietary notice shall be included and must be in 8-point Times New Roman font. The cover page and optional appendix are not included in the 20-page limit.

A2.8.2. Page limits listed in parentheses for the following sections are recommendations, and may be reallocated by the proposer, as necessary, within the 20-page limit.

A2.8.3. Cover Page. Include title and short title, point(s) of contact, phone number(s), fax and email, date, company or agency name, estimated total cost and cost per year of performance, and notice of intellectual property content, security level, and other necessary markings, plus illustrations or logos as chosen by the proposer. This cover page itself should not contain proprietary or otherwise sensitive information, and is not included in the 20 page limit.

A2.8.4. General Project Summary (1 page):

A2.8.4.1. Describe the critical USTRANSCOM/Joint Deployment and Distribution Enterprise (JDDE) capabilities which the project addresses. Describe the current system/interface, capability, or process deficiency the proposal addresses. Describe the operational gap or issue addressed and how the development effort contributes to the solution. Describe the specific deliverables of the RDT&E effort (for example, analysis, report, prototype, experimental results of demonstration, etc.)

A2.8.4.2. Identify the technologies to be explored/developed, the end user, and how the technology will enhance that user's capabilities. Consider including a mission scenario, vignette, or Operational View (OV-1) illustration.

A2.8.4.3. List the information technology and/or hardware/platform/vehicle systems/corporate services/interfaces (potential programs or systems of record) with which the technology may be integrated.

A2.8.5. Requirements Traceability (1 page):

A2.8.5.1. Identify the formal requirements, program directives, Joint Capabilities Integration and Development System products, DPO gap, or other formal source of requirements for the effort at the Joint or Service level. Higher priority will be given to those projects that address a Technology Need/Focus Area identified in the annual USTRANSCOM RDT&E Call for Proposals. Proposals should address the applicable Joint Capability Area (JCA), Tier IV,

Logistics capabilities. If no Tier IV capability applies, then identify the appropriate Tier I and II capability area. Definitions can be found in CJCSI 3170.01 series, as well as USTRANSCOMH 60-2 for Tier I and II areas. Tier I and II JCA capabilities will be evaluated separately.

A2.8.5.2. Alternately, if no formal requirement can be identified (see A2.8.5.1. above), identify any capability shortfalls from the USTRANSCOM RDT&E Handbook (USTRANSCOMH 60-2) not included in formal requirements documentation (previous criteria) that this project will address.

A2.8.5.3. If no formal source of requirements exists, clearly describe the capability gap and the vision for closing the capability gap. Cite any pertinent exercises, operational experience, and/or experimentation. Definitions of analysis can be found in CJCSI 3170.01 series, *Joint Capabilities Integration and Development System*.

A2.8.6. Project Suitability (2 pages):

A2.8.6.1. Describe the anticipated results and the manner in which the work will contribute to enhancing joint defense distribution and/or transportation capabilities. Describe why the technology/capability sought is not purely a Service (Title 10) responsibility and, therefore, qualified for joint USTRANSCOM RDT&E funding.

A2.8.6.2. Demonstrate why the project is innovative/transformational and, therefore, worthy of joint RDT&E funding and not simply an upgrade or modernization of an existing capability. Show the TRL at project start and anticipated TRL at project conclusion.

A2.8.6.3. Describe what steps were taken to ensure the effort is not duplicative.

A2.8.7. Benefit, Affordability, and Business Case (5 pages):

A2.8.7.1. If declaring a quantitative Return on Investment (ROI) as a benefit for the to be fielded capability, the proposer must document using Attachment 8 (to be included in the proposal's appendix, not counted against the 20 page limit. Although a quantitative ROI is not mandatory, an objective ROI is more compelling than a subjective one. Instructions for completing the template are located within the document (format obtainable via the annual call for proposals and at http://www.transcom.mil/cmd/associated/rdte/). ROI is calculated within the template as savings/cost avoidance generated by the investment minus the cost of the investment, divided by the cost of the investment.

ROI = (Savings and/or Cost Avoidance – Investment) / Investment.

The template is intended to complement the proposal. Where appropriate, the proposal should refer the evaluator to the template for additional information and vice versa.

Cost savings (e.g. replacing a manual operation performed by contractor personnel with a less expensive automated system) is a reduction to an approved program funding line that can be quantified, reallocated, and/or removed from the budget/POM and tracked. Whereas, cost

avoidance (e.g. overtime pay due to increased workload from inefficient processes or equipment) is a benefit from actions that reduce or eliminate the need for an increase in manpower or cost if present management practices continue. For projects of lower technological maturity or in the early stages of development, ROI/affordability can be based on broader assumptions, non-quantifiable benefits (also called qualitative benefits), and less-stringent criteria than would be expected for a go/no-go acquisition decision--as long as these assumptions are stated clearly. Non-quantifiable benefits (e.g. improve mission planning synchronization) cannot be quantifiably measured and are usually subjective in nature. Non-monetary quantifiable benefits can be measured quantifiably (e.g. reduction in military overtime man-hours). Characteristics such as product or service performance (miles/hour, orders/hour) or work environment (average noise level, mishaps/week) can sometimes be quantified in non-monetary terms. In such cases, non-monetary costs and benefits should be quantified to the greatest extent possible, and direct comparisons among these measures across alternatives should be made. Where affordability of the fielded capability is tentatively projected at the outset, the research plan should explicitly contain activities to refine these measures and refresh the estimates at project completion. A business case for use should be described.

A2.8.7.2. Sources and Assumptions. Document sources and assumptions associated with tangible/intangible costs/benefits for the project which affect (or make possible) the calculation of ROI and affordability. The sources and derivation of the costs/benefits must be documented and should include all interim calculations as appropriate. Source documentation (calculations, technical reports, similar RDT&E efforts, etc.) should be attached or referenced in the ROI template in the designated column.

A2.8.7.3. Evaluation of Alternatives. Describe why this RDT&E effort is preferable to non-RDT&E approaches; list other courses of action (including non-materiel solutions) considered and why they are not recommended. Other courses of action must address potential solutions based on Doctrine, Organization, Training, Materiel, Leadership, Personnel, Facilities, & Policy.

A2.8.7.4. Business Case for Implementation/ROI. If possible, quantitatively estimate the cost to implement the proposed capability (lifecycle cost including RDT&E, development/test, procurement, and sustainment) and lifecycle ROI. Describe any existing systems/interfaces which may be retired, or personnel support, which may be reduced (and thus operating costs saved) by use of the technology. Also, describe estimating methods or data sources which were used, and how they contributed to the credibility of the cost estimate.

A2.8.7.5. Applicability to Industry Practices and Partnerships. Describe, if possible, instances where the proposed technical approach has been used by industry (e.g., best or innovative practices) and how the capability, if developed and fielded in the JDDE, may assist DoD in working more economically or seamlessly with its commercial and other supply chain partners.

A2.8.8. Technical Merit and Maturity (4 pages):

A2.8.8.1. Describe the technologies to be developed, their risks for fielding, and methods of better understanding or reducing those risks during RDT&E.

A2.8.8.2. State the assessment of experts regarding technical merit of the approach. Is the approach based on sound scientific/engineering principles likely to succeed in achieving stated capabilities? What are the qualifications of the experts who make that judgment?

A2.8.9. Programmatics (4 pages):

A2.8.9.1. Cost, schedule, and performance are interrelated. This section is meant to show the schedule of activities for the RDT&E effort with accompanying funding requirements for each segment of the project and its deliverables. See Attachment 1, Section A, for references.

A2.8.9.2. Provide a detailed schedule, with start and end dates for major activities, appropriate decision point milestones, and completion dates for deliverables such as studies, prototypes, and other outputs of the research, for the entire project. Show links to other development efforts and to Programs/Systems of Record (P/SOR) to illustrate transition paths. If a project has already started, include any activities already completed. Include activities that support transition to further development, demonstration or acquisition, as appropriate.

A2.8.9.3. Describe prior expended and requested funding for the RDT&E effort in then-year thousands. Include an estimate of follow-on development, production, and sustainment costs. Recommended format (which may be included in the appendix):

Figure A2.1. Recommended Format – Lifecycle Funding Estimates.

$K, then-year	FYXX	FYXX	FYXX	FYXX	FYXX	FYXX	FYXX
Prior funding source (name)							
Requested USTRANSCOM R&D							
Estimated additional R&D							
Estimated development/test							
Estimated production/fielding							
Estimated transition*							
Estimated sustainment*							

* Required for all Transportation Working Capital Fund (TWCF) Program of Record IT efforts

A2.8.9.4. Describe the team of experts which will be dedicated to conducting project technical/management activities, citing prior experience and qualifications.

A2.8.9.5. List similar prior RDT&E work performed for DoD or other government agencies, if any, and points of contact (name and phone).

A2.8.9.6. Describe performance metrics (see table below) to be used during conduct of the research and development effort. (The RDT&E program is also required to report these metrics on each project in annual DoD-required budget documents). These metrics should be quantitative if at all possible or qualitative only by exception, and should be measurable at milestones during the course of the research with enough confidence to determine suitability for further research and development work and/or transition to additional development or even to the user. Describe the performance thresholds and/or exit criteria for each phase and the end of the project, and TRLs at the beginning and conclusion of the RDT&E effort. A recommended format is:

Figure A2.2 Recommended Format – Performance Metrics.

Metric Name	Description (and units)	Purpose of Metric (Decision supported)	Phase in Program Used	Minimum Acceptable (Threshold)	Desired Value(Objective)

A2.8.10. Technology Transition Strategy (TTS):

    a. For technology development efforts leading to a USTRANSCOM Program of Record, desired content can be found in USTRANSCOMI 61-1, Attachment 7 (http://www.ustranscom.mil/cmd/associated/rdte/?page=references.cfm)

    b. For technology development efforts leading to an external organization Program of Record (e.g., a Service), this section should identify proposed Service/Agency system/program of record.

A2.8.11. Appendix (5 pages). The proposer may include a 5-page diagram, appendix, photograph, or other visual aid, not included in the body page count, to further describe the proposed RDT&E project and its deliverables, demonstrate understanding of the domain and the place the technology will have in it, or other illustrative facts. The USTRANSCOM ROI template Attachment 8 should be included in this appendix. This appendix is meant as a visual aid or place for tables or lists, not as additional room for the text of the proposal.